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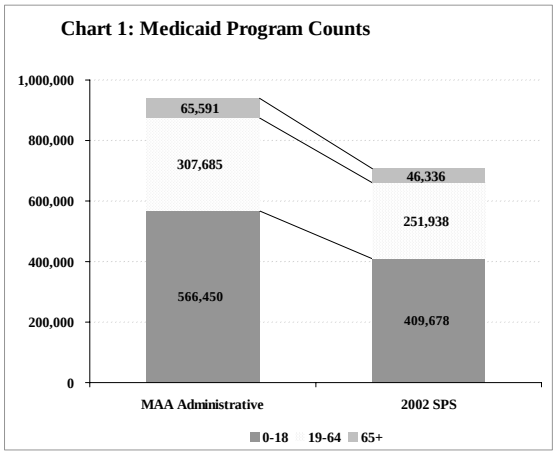
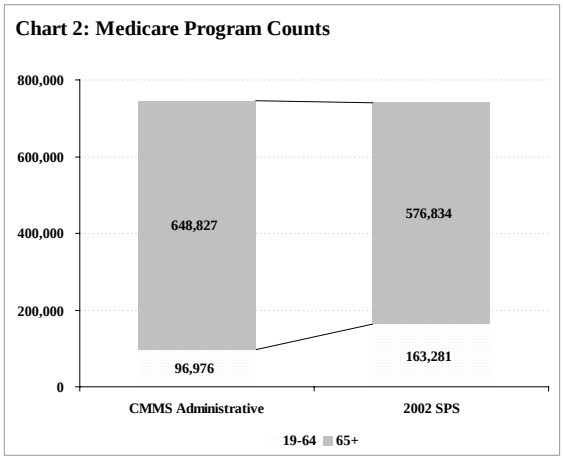
Accounting for Medicare and Medicaid Recipients

Contributor: Thea N. Mounts

Introduction

The number of persons identifying themselves in the Washington State Population Survey (SPS) as Medicaid or Medicare recipients differs from the number of actual recipients identified through administrative data for the two programs. In the 2002 SPS, the total Medicaid population is underreported by about 25 percent (see Chart 1). Underreporting for children is even greater at 28 percent. Although the number of Medicare recipients based on the original weights is only one-percent below the administrative count (see Chart 2), the age group distribution is not correct. The "19-64" age group is 68 percent above the administrative count for the program; and the "65 and Older" age group is undercounted by 11 percent





This type of Medicaid/Medicare misreporting occurs in other population surveys as well. In their review of literature on the uninsured population, Lewis, Ellwood, and Czajka[1] identify Medicaid underreporting levels on the Current Population Survey (CPS), Survey of Income and Program Participation (SIPP), Medical Expenditure Panel Survey (MEPS), and the Community Tracking Survey (CTS) ranging from seven to 50 percent. The authors cite two main reasons for underreporting. The first is intentional non-reporting because of the stigma associated with receiving public assistance. The second occurs when people do not realize they are enrolled in public coverage or mistakenly report a different type of coverage.

In order to answer medical policy questions using the SPS and account for the medical assistance population accurately, additional imputations were made and an additional medical assistance weighting scheme was created for the SPS file. These changes are described in this briefing paper.

[1] Lewis, Kimball, Marilyn Ellwood, and John L. Czajka. "Counting the Uninsured: A Review of the Literature." *Assessing the New Federalism,* Occasional Paper No. 8. Washington, D.C.: The Urban Institute, 1998.

Imputations and Weights

In the first step, additional deductive imputations were made on the original data records to bring responses more in line with known program characteristics and to correct observed inconsistencies in responses. The following imputations were made:

- Individuals who are under 65 years of age, indicate they are covered by Medicare, and do not answer "Yes" to any of the disability questions, are coded as Medicaid recipients and removed as Medicare recipients. Medicare for persons under 65 is limited to those with disabilities.
- Individuals who are over 65 years of age and indicate that they are either still working or are retired from employment are coded as Medicare recipients. Persons with a work history are generally eligible for Medicare.
- Individuals who are over 65 years of age and whose spouses are receiving Medicare are coded as Medicare recipients. Spouses of Medicare recipients who are 65 or older are also eligible for Medicare.
- Children who indicated they received cash assistance at some point during the previous year and had family incomes below 200 percent FPL were coded as Medicaid recipients. Persons who are eligible for cash assistance are generally eligible for medical coverage and receive a 12-month extension after they stop receiving cash grants.

For each of the above imputations, the corresponding insurance variable and imputation flag was set.

The second step in correcting the undercounts in Medicare and Medicaid required creating new weights for the data. The original, demographic weights in the SPS are based on data from the Census and population forecasts constructed by the Office of Financial Management (OFM). The weights are designed to inflate the survey sample to the known characteristics of the total state population. In other words, each person in the SPS represents multiple persons in the state population so that the sum of the weighted sample equals the state population.

For the demographic weights, records from the SPS are stratified by sample type[2], region, age category, sex, and race. Data from the OFM forecasts are stratified into the same cells. The population in a particular cell is then divided by the number of persons from the sample in the corresponding cell. This type of weighting is known as post-stratification and eliminates response bias based on the control variables.

The following is an example of how these types of weights are calculated. If 3,000 Native American, 20-29 year old women live in Region 1, and the Random Digit Dialing (RDD) survey sample reaches 10 of them, then the weight for each of these women in the SPS data set is 300 (3,000/10). In other words, each surveyed woman represents 300 women in the state population.

[2] Sample type refers to how the household was selected for the survey: through the Random Digit Dialing (RDD) sample or the ethnic over-sample.

Demographic Weights							
Region	**Sample Type**	**Sex**	**Race**	**Age**	**Persons Surveyed**	**Actual Population**	**Weight**
1	RDD	F	Native American	20-29	10	3,000	300
1	RDD	F	White	20-29	100	20,000	200
1	RDD	F	Black	20-29	5	1,000	200
1	:	F	:	20-29	:	10,000	:
1	Over	F	Hispanic	20-29	40	4,000	100
1	Over	F	Asian	20-29	10	2,000	200
1	**Total**	**F**	**------**	**20-29**	**250**	**40,000**	**-----**

The re-weighting procedure is similar to the original weighting with two changes. The data are stratified by region, age category, sex, and receipt of Medicaid. Race is dropped as a control variable, because of differences in the methods of recording race. In addition, the MAA administrative counts are used for the actual population counts for MAA categories. The populations for non-MAA cells are determined by subtracting the MAA counts from the original OFM population cell counts. Records from the over-sample are not given weights, because it is not possible to identify the over-sample population when the MAA data are included.

In the example above, the 3,000 Native American, 20-29 year old women living in Region 1 would not be distinguishable from the other 37,000 20-29 year old women living in Region 1 once race is dropped as a stratification variable. If the added MAA administrative data indicated 30,000 20-29 year old women in Region 1 were MAA recipients, 10,000 women in the age category in region 1 are not MAA eligible (40,000-30,000). If the SPS samples 200 MAA and 50 non-MAA 20-29 year old women in region 1, their MAA weights would be 150 (30,000/200) and 200 (10,000/50) respectively.

MAA Weights						
Region	**MAA**	**Sex**	**Age**	**Persons Surveyed**	**Actual Population**	**MAA Weight**
1	Yes	F	20-29	200	30,000	150
1	No	F	20-29	50	10,000	200
1	**Total**	**F**	**20-29**	**250**	**40,000**	**----**

The Native American woman in the first example would have an MAA weight that is lower than the original demographic weight. The magnitude of the decrease would depend on whether she receives MAA or not.

Results

Tables A and B present the administrative counts (column 2) for the Medicaid (MAA) and Medicare programs, program eligibility as determined from the SPS using the demographic weights, and program eligibility as determined from the SPS using the MAA weights.

Table A: Medicaid/MAA					
(1) Age	(2) Administrative Counts	(3) SPS - Demographic	(4) Demographic Weights As Percent of Administrative	(5) SPS – New MAA Weights	(6) MAA Weights As Percent of Administrative
0 – 18 Years Old	566,450	409,678	72%	571,006	101%
19 – 64 Years Old	307,685	251,938	82%	306,419	100%
65 Years and Older	65,591	46,336	71%	62,412	95%
Total Recipients	**942,408**	**707,952**	**75%**	**939,837**	**100%**

With the MAA weights and additional imputation, the MAA eligibility is less than one percent below the administrative counts. The undercount of children is eliminated. Elderly adults are still undercounted by 5 percent, but they represent only seven percent of the MAA population. Elderly undercounts may be due in large part to misreporting of Medicaid paid premiums for the Medicare program. In other words, when the MAA pays an individual's premium for Medicare, the individual may report that they receive only Medicare. The individual, however, would appear in the MAA administrative numbers.

Table B. Medicare					
(1) Age	(2) Administrative Counts	(3) SPS - Demographic	(4) Demographic Weights as Percent of Administrative	(5) SPS- New MAA Weights	(6) MAA Weights As Percent of Administrative
0 – 18 Years Old	56	0	0%	0	0%
19 – 54 Years Old	96,976	163,281	168%	75,045	77%
65 Years and Older	648,827	576,834	89%	657,114	101%
Total Recipients	**745,859**	**740,115**	**99%**	**732,159**	**98%**

For the Medicare program using the MAA weights and additional imputations, the "19-64" group is 23 percent below the administrative eligibility and the "65 and Older" count is one percent over the administrative number. Overall, the SPS Medicare count is two percent below the Medicare administrative number.

Table C illustrates the impact the different weighting methods have on the uninsured rate in Washington. Column 2 is the uninsured rate using the demographic weights before the additional imputations – 9.3 percent – and column 3 uses the MAA weights and the additional imputation – 8.4 percent.

C. Uninsured		
(1) Age	(2) SPS – Demographic Weight	(3) SPS – New Imputation & MAA Weights
0 – 18 Years Old	97,519	73,325
19 – 64 Years Old	453,143	429,365
65 Years and Older	12,399	3,571
Total Uninsured	**563,061**	**506,261**
Percent Uninsured	**9.3%**	**8.4%**

Conclusion

By adding further imputations and alternative weightings, we've improved our ability to represent the Medicaid and Medicare populations with the SPS. The MAA administrative weights should be used for questions specifically addressing governmental health care policy. Using these weights will help prevent bias in examining the prevalence of health care in Washington's population by starting from the population covered by the Medical Assistance Administration. The demographic weights should, however, continue to be used for most analyses of the State Population Survey. By using the demographic weights, you will utilize the original survey data to the fullest extent possible. In creating the MAA administrative weights we necessarily lost some detail when all race categories were collapsed together and the over sample records were eliminated.